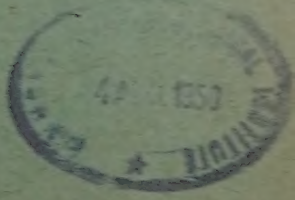
BASUTOLAND

ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR THE YEAR 1949



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SECTION I

REVIEW

INTRODUCTION

1. It has been decided that the Annual Report of the Department of Agriculture should be based in future on the calendar year. This report therefore, covers the period from October, 1948 to the end of December, 1949.

2. The period under review was marked by adversity ; the crop season of 1949 was one of the worst on record due to the failure of the spring and summer rains whilst from the financial point of view expenditure had to be curtailed to the minimum owing to the prevailing stringency.

3. In spite on these set-backs sound progress was made in many directions and moreover plans were drawn up to speed up the policy of the Department. The main points of interest are :

(1) Increase in the Levy on Wool and Mohair. Advantage was taken of the high price of wool, which is the most valuable export from the Territory, to raise the wool and mohair export levy from a halfpenny to one penny per pound so as to provide funds for development work which will be of value to the industry as a whole, i.e. the importation of improved rams, the improvement of grazing by rotational methods, the registration and branding of livestock and the building of wool classing sheds.

(2) A highly successful Departmental Conference of officers of the Department was held in April which was opened by His Honour the Resident Commissioner. The work of the Department was reviewed and plans were made so as to integrate the work of the Department more closely with that of the Administration and Native Authorities. Other items of interest were discussed which included the various methods of approach, including "the indirect approach", which has proved so successful in other Colonies.

(3) An Agricultural Survey was started towards the end of the year with a view to obtaining reliable basic information on which to base the future land utilization policy of the Territory.

(4) The Leper Settlement farm was taken over by the Agricultural Department from the Medical Department. In addition to providing food for the Lepers the farm will be used as an experiment station and demonstration farm.

AGRICULTURAL POLICY

4. The aims and ideals to which agricultural effort should be directed have been given in detail in previous annual reports and in the Report on the 10 Year Development Plan for the Territory which, having been accepted by Government is being implemented as circumstances permit.

5. A summary of the main lines upon which agricultural policy continues to be directed is given below :

(1) To prevent the exploitation of the soil and to endeavour to improve its productivity under agricultural management whether it be arable or grazing, and to improve, wherever possible, the water supply for both humans and livestock.

(2) To encourage the production of food crops bearing in mind the importance of nutritionally desirable food crops both for humans and for livestock, to supply improved planting materials and to advise upon methods of production.

(3) To encourage the maintenance of livestock of improved productive capacity, in the interests of the people and of soil fertility. Better animal products are required for nutritional

purposes and for sale, i. e. milk and meat – wool, mohair, hides and skins. More manure is wanted to maintain soil fertility.

(4) To carry out investigations designed to expand the range and improve the quality of economic crops both for export and local consumption by field trials.

(5) To encourage a healthy outlook on agriculture as a mode of life by the expansion of vocational education in agriculture and the creation of an informed extension service.

(6) To stimulate co-operation amongst agriculturalists with the object of obtaining co-operative or group production, co-operative marketing and provide a channel for the granting of financial assistance to productive enterprises.

STAFF

6. Mr. J. G. M. King, M.B.E. assumed duty as Director of Livestock and Agricultural Services in October, 1948. The Veterinary Officer, Mr. Ross, left the service of the Basutoland Government to take up duties with the Union Government. The vacancy of Principal Veterinary Officer was filled by the appointment of Mr. Fern, who had recently retired from service in Northern Rhodesia, on a three year contract. Messrs. Mapham and Wiggill were appointed as Agricultural and Livestock Officers to complete establishment. With the abolition of the post of Conservator of Forests, Mr. Maughan Brown was transferred to Tanganyika. Mr. Dixie assumed duty as clerk at Headquarters, and Mr. Bennie was transferred on secondment to Mauritius.

7. *Administration.* The present strength and the disposition of the Administrative and Executive Staff is given in Appendix I.

WEATHER CONDITIONS

8. The present report covers the whole of one crop season and the beginning of a second. Crops ripen during the period April–July, which should be borne in mind when the rainfall figures given in Appendix II are examined.

9. It will be seen that the territorial rainfall total of 17·26 inches for the crop year falls 11·33 inches behind the 33 year average, and as a result conditions can be compared with the famine year of 1933. Except in certain favoured places, amounting in all to a very small area, rains were insufficient to bring crops to maturity. During the winter grazing conditions were inadequate, and as a result the stock losses were heavy. This position improved in the Spring of 1949, when rainfall became approximately normal, 11·77 inches being recorded for the new crop year. Prospects for all crops at the end of December were excellent.

SECTION II

AGRICULTURE

A. CROP PRODUCTION AND YIELDS

10. *Maize, Kaffir corn, wheat, peas, beans, oats and barley.* A very large proportion of the arable land was out of cultivation during the 1949 crop season. The position was brought about by the absence in spring and summer of ploughing and planting rains, and it was only in favoured localities that such crops as were planted were brought to maturity.

11. Demonstration plots of all crops were attempted, but on account of weather conditions only about one third matured a crop, the best returns being in the neighbourhood of 500 lb. of grain to the acre.

12. Exports of peas and wheat to the Union were very small.

13. A serious position confronted the Basutoland Government when it became evident in the autumn of 1949 that a severe shortage of foodstuffs was likely. Accordingly, intensive propaganda was initiated to increase the area sown in the lowlands to winter wheat. With the co-operation of the Union Wheat Industry Control Board the necessary supply of wheat seed of a variety suitable for lowland planting was made available. In the northern districts, where wheat is not normally sown as a winter crop, the response to propaganda was limited, while in the south a considerably increased area was

sown. A total of 1,002 bags of seed, which was all treated for smut was sold. The crop from this was harvested in November ; speaking generally it was disappointing, on account of inadequate winter rains.

14. The approximate production of grain during 1949 and in the six preceeding years is given in Appendix III.

B. INCREASED FOOD PRODUCTION, STORAGE AND PROPAGANDA

15. It was fortunate indeed that a large carry-over of maize from the excellent crop which was reaped in the previous year was retained in the Territory. Immediately prior to the period under reveiw, arrangements were made to export 20,000 bags (203 lb. gross) of maize to the Bechuanaland Protectorate, which was to be stored and milled in the Union for despatch to the Bechuanaland Protectorate as required. When it became evident that the shortage of foodtuffs in Basutoland was serious, 14,500 of these bags were returned to Basutoland. In addition the help of the Union Maize Industry Control Board was sought, and thanks are expressed to that body for allowing the export of unlimited quantities of maize to Basutoland when the Union herself was not quite sure of her supply position. During the period 1st January 1949 to 31st December, 1949 288,000 bags of Union grown maize have been imported. It is certain that without this assistance Basutoland would have been very badly placed. On this quantity approximately £59,000 has been collected from the Basutoland consumers, and repaid to the Union Government as a refund of the subsidy which is given to consumers in the Union and paid by the Union tax-payer.

16. *Grain Storage Tanks.* Work on these has proceeded satisfactorily. Storage for 9,600 bags at three centres has been completed, and work is well in progress with the erection of tanks to store a further 24,300 bags.

17. The first tanks were constructed exactly to the specification of those made in the Bechuanaland Protectorate, i. e. cylindrical, 12 feet by 12 feet inside dimensions, and of 9 inches cement-sand reinforced brick walls and reinforced concrete roof, at a cost of about 8*s*. per bag of storage space. This cost can be reduced to about

5*s*. per bag, by increasing the size of the tanks to a 1,000 bag capacity, and eight tanks of the larger capacity are approaching completion. The size of the larger tanks is 16 feet high by 18 feet diameter. Slight modifications in design are necessary for these large tanks which include a central pillar for roof support and a corresponding change in the design of reinforcement for the roof.

18. *Manuring Campaign.* 493,000 bags of 100 lb. each of kraal manure and ash were carried on to lands, representing adequate manuring of about 5,000 acres. This figure is an increase of 291,000 bags over the figure for the previous year ; expenditure on subsidy amounted to £2,700.

19. During the period October–December 1949 further expenditure amounting to £1,622 in subsidy was made for the application of 210,000 bags of kraal manure and ash ; representing the manuring of 2,100 acres of land.

20. Because of the dry year the benefit of manuring for the 1949 crop was not apparent, but present indications are that the demonstration will became of value to the crop which is to be harvested in 1950.

21. It is not proposed to pay subsidy for manuring after March 1950, as it is considered that ample opportunity has been given to the Basuto farmers to learn the value of manuring. The Government-owned two wheeled carts will, however, remain in the districts for the use of persons wishing to cart manure on to their lands.

22. *Phosphate Fertilizers.* Two hundred and ninety eight bags of 200 lb. of superphosphate were purchased by Basuto farmers for the 1949 crop.

23. *Seed Sales.* The following sales of seed were made by the Department for the 1949 crop :

Maize	224	bags	of	203	lb.	gross.
Sorghum	165	"	"	"	"	"
Wheat	1002	"	"	"	"	"
Beans	15	"	"	"	"	"

It has been decided as a matter of policy that, in future, except in cases of emergency, the holding of stocks of seed by the Depart-

ment shall be discontinued, this being considered to be a normal function of the trading stations of which an adequate number are in existence. For example, the maize crop which was sown in November and December 1949 was very largely seed from Union sources of the white flint type, which is eminently suitable for planting in the lowlands. Retail traders were able to supply all demands. This change in policy will not however interfere with any improved seed multiplication programme which may be embarked upon.

24. *Vegetable Gradens.* Except on certain very favoured sites, vegetable gardens were very largely a failure during the autumn of 1949. 10,900 gardens were worked, a reduction of 2,380 on the number in the previous year, but renewed interest was shown with the arrival of rain in October. The usual quantities of free seed of cabbage, carrot, onion, and turnip were issued. About 10,000 seedling vegetable plants were sold from nurseries established for this purpose.

25. The year was in no way suitable for the planting out of fruit trees, but free issues were made consisting of 226 peach trees, 250 figs and 806 vines. Arrangements have been made for a further large supply of peach trees to be made available during the coming year.

26. *Agricultural Shows.* No shows were held during the year, on account of the lack of produce and the poor condition of livestock.

27. *Agricultural Associations.* 203 associations are in existence, with an average membership of 37 persons. Only relatively few of the associations, however, are actively functioning; there is a tendency in those areas where co-operative wool marketing societies have been formed for agricultural associations to become moribund.

28. *Demonstrators and Education.* The permanent establishment includes provision for 44 demontrators and 66 assistant demonstrators, whose duties include lectures and demonstrations, laying out grass buffer strips in the mountains, tree planting, simple treatment of livestock ailments and conducting demonstration plots.

29. On account of the adverse weather conditions a high percentage of the demonstration plots worked were a failure, but from those plots on which crops of kaffir corn and maize were harvested

yields of over 500 lb. of grain were taken, as compared with adjacent plot yields of 150 lb. of grain where no manuring or demonstrators' help was given. 1135 lectures and demonstrations on topical subjects were given by agricultural and livestock officers; these were attended by 50,097 Basuto farmers.

C. INSECT PESTS AND FUNGUS DISEASES

30. Associated with the dry year is to be recorded the almost complete absence of any insect or fungus attack of epidemic proportions. During November 1949 however the first attacks of cut worm were reported, but damage was not severe.

D. VILLAGE AND RESERVE TREE PLANTING

31. Weather conditions were quite unsuitable for the planting of trees. Planting was virtually confined to refilling areas in favoured sites ; some 440,000 trees were so planted out.

32. Supplies of seedling trees were obtained from the nurseries which had been established by the Assistant Conservator of Forests at Peka, Maseru, Mafeteng, Qacha's Nek and Mokhotlong.

33. The Native Authority has now agreed that tree planting plots may be granted to individuals in place of the present system of communal planting and ownership. Individuals may now grow trees for their own personal benefit after having first obtained permission to do so from their respective Native Authorities. In the past there was a complete apathy shown to the fate of trees after planting and it is hoped that this change will result in a greater interest being shown.

E. MARKETING AND FOOD SUPPLIES

34. The small quantity of maize grown in the Territory made it unnecessary to gazette controlled prices for Basutoland grown maize during the year. Only an inconsequential quantity came into the traders' hands, and the resale price of this was set by the cost of maize imported from the Union.

35. With the addition of supplies from the Union, the food position was satisfactory throughout the period under review. In this connection thanks must again be expressed to the Traders' Advisory Committee for their invaluable assistance and advice in matters affecting food distribution. Their help and advice on other agricultural matters is gratefully acknowledged also.

36. Under this section reference has to be made to the growth of the co-operative movement in Basutoland, particularly in connection with the sale of wool. Under the able guidance of the Registrar of Co-operative Societies a number of wool and mohair marketing societies have been formed. These societies are proving of great use in teaching the Basuto the value of correct wool classing, and also the benefits of co-operation ; the latter opening the door to other and perhaps less definable forms of co-operation which are so necessary in Basutoland before any real agricultural progress can take place. A few details of the stage which the wool and mohair Marketing Co-operatives have reached are contained in Appendix IV.

37. Exports of produce during 12 months under review amounted to :

	Bags of 200 lb.			
	*Maize**	*Kaffir Corn*	*Wheat*	*Peas*
October–December 1948	16,678	9,995	7,277	4,158
January–March 1949	3,394	894	621	4,108
April–June 1949	287	570	7,941	6,237
July–September1949	32	757	821	2,714
Total for 12 months :	20,391	12,216	16,660	17,217

* Maize exports were almost entirely in transit, and were balanced by imports in other parts of the Territory.

F. GRAZING

38. It may now be stated that the need for grazing control in the mountain areas has been accepted by the Basuto, and that their willing co-operation is being given in all areas where control has been started.

39. In previous reports brief reference has been made to the scheme for the rehabilitation of the mountain areas. The results of this work which are now showing warrant a fuller description. Appendix V gives a fuller statement of the problem, the methods used and what has been accomplished to date.

G. EXPERIMENTAL WORK

40. As in previous Reports, the experimental work will be discussed under the four sub-headings Crop Improvement, Mountain Grassland, Livestock Improvement and Agricultural Improvement areas. Reference should be made to the Annual Report for 1948 for details of the experimental work which are not included below.

(1) Crop Improvement

41. (a) *Wheat.* Autumn sown wheat variety tests were a failure on account of the drought. The spring sown (mountain) trial gave good results, with Ceres and Talberg (yields 1,052 and 1,118 lb. per acre) giving the best yields. Eight of the field selections were discarded. 4,600 lb. of the variety Ceres was reaped from a multiplication area and sold for seed purposes.

42. (b) *Kaffir corn.* The variety test proved a failure on account of drought.

43. (c) *Crop rotation trial.* Poor yields were taken from the experiment. This has to be considered as a long term experiment. Only after some years work may results be expected.

44. (d) *Grass Ley experiment.* Plots which have been under various treatments for two years were ploughed in October, 1949 and planted to maize. A fair stand and good early growth has been obtained. Growth of the various grasses on the 4 year leys has been fair, with the exception of the Rhodes Grass treatment.

45. (e) *Other Crops.* The plots of linseed sown in October 1948 at Makhaleng gave yields of 209 lb. (Punjab) and 34 lb. (Royal) per acre.

(2) Mountain Grassland

46. The experiments at Thaba Putsoa and Thaba Tšoeu were continued. The stocking rate at Thaba Putsoa was considered to be too heavy, and the paddocks are to be re-designed to give different

stock rates. Transect observations at Thaba Tšoeu, where a stocking rate of the equivalent of 1 head of large stock to eight acres of grazing is being observed, show a continued improvement in herbage.

(3) Livestock Improvement

47. Work with the Inkone herd continued, but milk yields during the winter months fell to very low figures. On milk yield it has been possible to cull from the herd 11 cows and their progeny. The stage has been reached when it will shortly be possible to try out some of the young bulls of known milk producing ancestry.

(4) Agricultural Improvement Area (Maphutseng)

48. The reallocation of lands on a family size basis has now been completed, and it is found that there are still 150 acres of land available for future applicants. The occupiers of land within this area are now beginning to understand the scheme and to take more interest in its running. A buying co-operative society is being formed.

49. Th scheme at present involves the treatment of 3,700 acres of land, which forms a small portion of the catchment area of the Maphutseng River. During his visit Dr. Lowdermilk expressed the opinion that it would be of great value in future planning in Basutoland if the whole catchment, about 141 square miles in extent, with well defined mountain boundaries, could be treated as a pilot project demonstration area on the pattern of the conservation practice used by the Tennessee Valley Authority. The Maphutseng valley lends itself peculiarly to being used for an experiment of this kind, as it contains balanced proportions of lowland, foothill and mountainous country. Steps are being taken to implement this proposal.

50. Reference was made in the previous Report to the establishment of an agricultural training school in the Maphutseng area. The shcool grounds have been allocated to various uses as follows:

Grazing ground	–	27·3 acres
Crops	–	13·7 "
Vegetables	–	·17 "
Orchard	–	1·7 "
Homestead & School	–	1·6 "
Irrigable area	–	2·9 "

A simple crop rotation is to be practised on the "arable" portion of the land, all farm work being carried out by the school children.

51. School training with an agricultural bias such as has been started at this institution could well be extended in Basutoland, and full facilities and technical assistance will readily be made available by the Department for the extension of this work.

(5) Agricultural Smallholdings

52. The incomes of the occupants of the two demonstration holdings are given in Appedix VI.

53. It will be noted that the Maseru smallholder earned a bare subsistence living, his sole cash income being obtained from the sale of a pig. The Mohale's Hoek farmer was fortunate in reaping a fair crop of autumn sown wheat, part of which was sold for cash.

54. From these and previous obsevations it seems necessary that more emphasis must be laid on small livestock and livestock products in order that the individual may have a source of cash income in periods of crop failure.

55. The possibility of establishing co-operative piggeries is under investigation.

H. AGRICULTURAL SURVEY

56. An Agricultural Survey was planned in 1949 and was in progress by the end of the year. Field work will be completed in the middle of 1950, and statistics, with a full report of how they were obtained should be available early in 1951. The Survey forms Basutoland's contribution to the World Census of Agriculture initiated by the Food and Agricultural Organization of the United Nations ; but apart from obligations to share in the steps towards an accurate assessment of the world's agricultural needs and resources, fact-finding of this kind is clearly essential to any realistic planning. The value of this opportunity has been emphasized by the Secretary of State for the Colonies, and the particular need for such a survey in Basutoland was recognized by Government at the outset.

57. The immediate object of the survey is to ascertain, in respect of each of the "zones" of the Territory (Lowlands, Foothills, Mountains and Orange Valley) :

(a) total cultivated acreage.
(b) acreage under each crop
(c) total production and mean yield per acre of each crop.
(d) number of fields, and mean cultivated acreage, per family.
(e) various other data of agricultural significance.
(f) correlation between these statistics and existing physical and sociological data.

Preparation for the Survey was carried out as follows :

(a) The secondment of an Administrative Officer (in charge of the Survey) and of a Senior Agricultural Officer to collaborate in the design, organization and supervision of the Survey, under the direction of the Director of Livestock and Agricultural Services.
(b) Compilation of basic data on population distribution.
(c) Consultation on the sampling methods to be employed, with Prof. E. Batson, Head of the School of Social Science, University of Cape Town.
(d) Consultation with the Paramount Chief, who agreed to the proposals without reservation and has given all necessary assistance.

58. The survey is being carried out on a random sample of households, selected in two stages ; first, by the random selection of Census enumerations, areas and lists (as defined and compiled in the 1946 Population Census) with a sampling fraction of approximately 1 in 12 ; secondly by systematic selection (1 in 5) of the householders listed in the selected areas. The sample is stratified by zone (as specified in paragraph 57) and by region (or district) grouping. The main natural and administrative divisions of the Territory are thus represented as nearly as possible in their correct proportions in respect to population. These arrangements are modified to some extent in the estimation of crop yields ; and for minor categories such as Trading and Mission Stations and Government Reserves different methods of enumeration are employed.

59. Field work consists of interrogation in the villages from which the required information from the selected housholders is obtained, followed by accurate measurements of their fields, acreages

under each crop, sample crop yields, etc. The chiefs, headmen and people have given every assistance and have shown no sign of opposition, although it has not been possible to make many people understand fully the reasons for carrying out the Survey.

60. Field work is being carried out by the Agricultural and Livestock Officers assisted by their African staffs. Approximately half of their working time is at present being devoted to this arduous work, which often lies in remote and difficult country.

SECTION III

LIVESTOCK AND VETERINARY

61. *Biennial Census.* The census taken in February – March 1949 revealed an overall decrease in the number of livestock in the Territory.

The figures are :

Bovines (increase)	1,983	head
Horses (decrease)	9,452	"
Mules (increase)	522	"
Donkeys (decrease)	2,915	"
Sheep (decrease)	145,431	"
Goats (decrease)	37,746	"
Pigs (increase)	111	"

In terms of large stock this represents a total decrease of over 46,000 head.

62. Restrictions on the importation of livestock have been maintained. The onus of making the preliminary decision as whether or not an individual should be allowed to import livestock has now been placed on the Ward Chief in charge of the area to which stock are to be taken. This measure was taken to awaken the interest of the Native Authorities in the condition of their grazing areas and to make them accept a greater degree of responsibility for controlling the import of livestock.

Economic Aspect

63. With the exception of the latter end of 1949 the period under review cannot be described as favourable. There was a low rainfall, with consequent insufficiency of grazing. On account of these semi-drought conditions, the mortality of livestock was high. The winter season was cold and stock suffered as maize stover, which normally provides substantial contribution to winter feed, was in negligible supply. The export of cattle and sheep to the Union was continued, the market remaining attractive. Auction sales were held during the year and satisfactory prices were obtained.

64. Statistics compiled by the Veterinary Division relating to the veterinary and animal husbandry side of Agriculture are given in Appendix VII.

Animal Health

65. Apart from losses by drought the health of the livestock in Basutoland was satisfactory.

Disease Control

66. The number of smears examined during the year was 71. These came from various parts of the Territory; seven of these were positive to anaplasmosis and three to quarter evil.

67. *Anthrax.* No outbreaks of anthrax were reported but prophylactic inoculations were carried out as necessary. All imported cattle are inoculated on arrival at the port of entry.

68. *Quarter Evil.* There is a great demand for quarter evil vaccine and in the spring months large numbers of susceptible cattle are inoculated before removal to the mountains.

69. *Lumpy Skin Disease.* No outbreaks were reported.

70. *Equine Disease.* The number of cases of strangles was above normal but the type was more benign, and no deaths from this disease were reported. Equine mange appeared to be on the increase and serveral reports of outbreaks were received.

Other Disease

71. *Sheep Scab.* An extensive inspection of all sheep along the Union border within Basutoland was carried out without any cases being discovered.

72. Many cases of mastitis, and biliary fever in dogs were treated at the Clinic, which also dealt with hundreds of various minor disorders of livestock.

73. In addition a considerable number of surgical operations and castrations were carried out at stock owners' requests.

Stud

74. A pure bred Arab stallion was purchased towards the end of the year, but too late to be made use of in the 1949 breeding season. The whole question of equine improvement is at present receiving reconsideration, and it is expected that an improvement programme on sound lines will be in operation shortly.

Animal Husbandry

75. *Small Stock.* 703,193 lb. of wool were classed under Government supervision, excluding wool classed by traders themselves to Government standards.

76. There were a number of complaints from the Coast of wool being badly sorted, particularly in regard to brands and paint marks being included with other classes. Appropriate action was taken in all cases reported, but it is thought that a tightening up in wool classing and export regulations is called for in order that the standard of Basutoland wool may be further improved. New regulations are at present being framed.

77. The quantity of wool and mohair exported during the period October 1948 – December 1949 amounted to :

Wool	17,194,362 lb.
Mohair	1,867,306 lb.

of a total value of the producer amounting to over £1,600,000. Prices maintained an extremely satisfactory level, and it is considered that the policy of wool improvement embarked upon in 1936 has proved fully justified.

78. 1,090 merino rams were introduced from the Union in October 1949 for resale to flock owners, and a further nine wool sheds constructed.

79. In the previous Report it was stated that the Basutoland National Council had agreed to a reduction being made in the goat population of the Territory. A representative committee of Basuto goat owners met in April, 1949, to discuss ways and means of effecting this reduction. The following points were agreed upon :

(a) The goat population to be reduced from approximately 640,000 to 480,000 by compulsory sale over a period of 5 years.
(b) The presentation of goats for purchase on a live weight basis to be organized by the ward chiefs.
(c) The Agricultural Department to be responsible for the purchase and onward transmission of surplus goats for slaughter.
(d) The Agricultural Department to purchase suitable Angora rams for resale to Basuto.

80. It has not been possible to proceed with this scheme to date because of the pressure of other work, i. e. Agricultural Census and the like, but arrangements are being made to obtain additional staff to implement this scheme and that of branding and registration both of which are to receive a high priority in the Department's programme of work.

81. *Stock Branding and Registration.* A request was made by the Basutoland National Council that universal branding and registration of all livestock should be introduced, mainly as a preventive measure against stock theft. As this will entail the marking of some $2\frac{3}{4}$ million head of stock, and bi-annual checking, it was felt that the measure should be preceded by a pilot scheme, in order that difficulties might become manifest.

82. The pilot scheme, during which some 50,000 head of stock were marked, was carried out in October 1949, and from it much useful information was obtained.

83. The principle which has been followed in the allocation of marks is one which will make possible the easy checking of

ownership down to the local headman. In the case of stock theft it is a simple matter to establish ownership amongst the individuals who fall under a headman. Under this system it is possible to accomplish universal branding using only a 3-letter marking.

84. Large stock (cattle, horses, mules and donkeys) are branded with a hot iron. Small stock are marked with tattoo forceps on the inside of the leg. At the time of branding and tattooing an entry is made in a master register giving details of stock owned by each individual, and the latter is given a small book in which corresponding entry is made. It has been found comparatively easy to train Basuto in the use of marking materials and at the close of the trial over 800 head of large stock and upwards of 2,000 head of sheep and goats were being marked and registered at the pilot scheme centre per day.

85. From the information obtained it is estimated that thirty-six branding centres will be required in the Territory. As registration is an essential preliminary to the rationalization of the stock industry, the scheme is to be given, as previously stated, a high priority during the next two years.

Marketing of Animals

86. 10 auction sales were held during the year, at which 1,562 cattle were sold for £14,671.

87. *Legislation.* No new legislation was gazetted during the period under review.

SECTION IV

SOIL CONSERVATION WORK

88. The Soil Conservation Work is under the supervision of the Soil Conservation Officer who, in addition to his general administrative duties, supervises the constructional work in the Maseru district.

89. Constructional work in the districts is in the direct charge of either European or African foremen and supervised by the

District Agricultural and Livestock Officer. During the period under review there were no changes of foremen. There are five European and three African foremen in charge of the eight tractor units operating in the lowlands.

90. The Paramount Chief and Native Authorities were requested to submit the names of suitable Africans for training as conservation foremen, but so far no applications have been received.

Weather Conditions

91. The year under review has been the driest and most difficult year in memory. Only 15·49 inches of rain fell in Maseru from October to September. The Territorial average was only 18·15 inches as against an average of 28·59 inches for the past 33 years. The early summer was particularly dry and windy. The first rain, registering 0·70 inches, fell on 12th October. This was followed by a very dry spell till the first week in January, when the drought was partially broken by some heavy hail storms. These short torrential downpours did considerable damage to some of the new works. Heavy storms at the end of January did not improve conditions and two dams were breached. There was very little rain or snow during the winter months and conditions again became dry.

Plant

92. Two new Adams No. 84 Graders were received during February, and two reconditioned 124 Adams Graders were ordered. The Fordson tractor equipped with half tracks has not proved satisfactory for terrace work, and so is used on dam construction.

93. The Four D6, three RD4, two D4 and one 22 Caterpillar tractors have all continued to give good service and are running well. The total cost of spares and repairs to plant amounted to £1,826. 15*s*. 6*d*. which is approximately £1,000 less than last year's expenditure on this item.

94. In August two reconditioned D4 tractors were received from the Crown Agents.

Oxen

95. Due to drought it has been a very trying year for oxen and in spite of heavy feed bills for imported lucerne hay, which

at times has been unprocurable, losses have been heavy. In several districts animals were in such poor condition that it was not possible to use them at all during September.

Work Done

96. The progress made in the principal sections of the work is shown in Appendix VIII.

97. (a) *Terracing in Lowlands.* The area terraced was 30,486·6 acres which, in spite of unfavourable conditions, is a record for any one year. This increase was due to interspacing heavy banks with more Buffer Strips where no suitable disposals exist, and to the fact that there were no long periods when the tractors were idle. There was also a regular supply of labour.

98. The average cost per acre was 9·2*s.* which is 0·85*s.* less than last year. This reduction in cost is due to the fact that the gangs have all been kept up to full strength. 1,542,426 yards of earth were moved in the construction of the 3,109,485 yards or 1,799·5 miles of terrace bank. The mean cost is 6·2*s.* per 100 yards and 1·2*s.* per 10 cub. yards which is 0·2*s.* and 0·1*s.* more than last year. This slight increase is due to hard conditions of the soil and to heavy repair costs due to numerous breaks in the new works. Cost of repairs amounted to £1,054. 1*s.* 6*d.*

99. (b) *Dams.* 28 major dams were constructed during the year at a cost of £1,033. 14*s.* 1*d.* for the 34,028 cub. yards of wall. The total capacity of the 28 dams is 61,050,000 gallons. This works out at 6*s.* per 10 cub. yards and 0·34*s.* per 1,000 gallons. This is nearly 2*s.* per 10 cub. yards more than last year, due to dry conditions and repair costs on the two dams which broke. Dams have proved of inestimable value during the last two dry winters and have saved the live of thousands of large stock and spared the vegetative cover from the effect of stock regularly tramping many miles to the rivers. Several of the larger rivers dried up completely. Dr. Lowdermilk, who visited the Territory during the height of the drought, was particularly impressed with the dam construction aspect of conservation work.

100. (c) *Tree Planting.* Once again the season has been most unfavourable for tree planting. 11,365 willows, poplars and mountain

bamboos were planted out in dongas and around dams in fenced areas. The total cost of this work was £122. 9*s*. 9*d*. This includes care and maintenance of older plantations.

101. (d) *Fencing*. One tree area of 18 acres was fenced in together with a meadow strip of 14½ acres which will be planted up to reeds and poplars. Experience has shown that it is essential to fence in all new dam walls, and this has been done. The total cost of fencing amounted to £149. 17*s*. 9*d*. including repairs to old fencing.

102. (e) *Beaconing*. All new meadow strips were beaconed off, and, as an experiment, all the dongas in a large valley and in one reserve have been so treated. Stone beacons are set out at a distance from the edge of the donga equal to its depth. No ploughing is allowed between the beacons and the edge of the donga, and it is prosposed to keep all stock away from these dongas areas during the summer months. If this practice can be extended throughout the Territory it will be useful achievement. One ward chief has agreed to try the scheme out in all his cultivated area this coming summer. In most districts the people have seen and admit the value of meadow strips in times of drought.

103. (f) *Grass Planting*. Due to dry conditions most of the kikuyu grass has stood up to the trying conditions better than any indigenous grass and in many cases it was the only green grazing available during the drought. £547. 10*s*. 0*d*. was expended on this work.

104. (g) *Grass Spillways*. 8 Grass Spillways into the heads of dongas have been established, but where these were not fenced off stock have caused considerable damage and serious washing resulted. Total cost £17. 1*s*. 6*d*.

105. (h) *Stone Spillways*. One stone spillway was constructed. This was carried out as an experiment to test out a new type of structure to spill flood water over a weir into a donga. The total cost of this experimental weir was £106. 11*s*. 2*d*. A considerable amount of useful data has already been obtained from the experiment.

106. (i) *Buffer Grass Strips*. The speed of his work was stepped up considerably and is a record for any one year, nearly 58,000 acres having been protected. This is satisfactory, and most of the

larger valleys in mountains proper have now been completed. The cost of setting out these 22,628,269 yards of strips was £4,277.18*s.* 11*d.*, working out at 1·4*s.* an acre, which is 0·3*s.* an acre less than last year. In the dry Orange River Valley and many similar valleys, grass is very slow in re-establishing itself on unploughed strips, but in the higher rainfall areas the strips are well grassed and are proving very satisfactory where the correct width of at least 6ft. has been maintained.

107. (j) *Mountain Diversion Furrows.* Contrary to expectation less diversion furrow work was undertaken during the period under review. Being a dry season, with localized food shortage occuring, it was expected that there would be a big demand for this work. Such however, was not the case and people requested an increase in the contract price of £1 per 100 yards of 6 foot width. In April the price for heavy banks was increased to 25*s.* for 6 foot with 20*s.* 15*s.* and 10*s.* for 100 yards being paid for furrows 5 ft., 4 ft. and 3 ft. wide respectively.

It is interesting to record that small groups of women working in teams have been earning 3*s.* per day each ; the quality of their work was excellent. In an exceptional case one man earned 10*s.* per day by using his plough and oxen to loosen the ground.

108. 323,058 yards of furrow were constructed at a total cost of £3,549. 19*s.* 4*d.* or an average cost of 22*s.* per 100 yards or a mean cost of 5·4*s.* per acre. This does not include supervision or overhead expenses. Furrows which are situated below badly denuded slopes have silted up. Experience has shown that if this silt is not removed serious breaks occur, and it is therefore necessary that every individual whose land is protected by a diversion furrow should be compelled to clean the furrow out after every heavy storm.

Maintenance

109. During the year, on the advice of the Basutoland Council, certain works which had previously been done by communal labour were abolished. It was decided, however, that the maintenance of soil conservation works in the villages and on communal land should be regarded as work of national importance and should therefore still continue to be done by the people themselves. In April 1949 the National Treasury voted an extra £1,400 to speed up the repair work in and around villages which through neglect over a period

of years had fallen badly into disrepair. Since the rains ended each maintenance man has been given two extra men to assist him in this very necessary work. Here again Dr. Lowdermilk expressed his appreciation of the good state of repair of the work he saw. The total expenditure on maintenance this year, which includes buffer strip and diversion furrow work in the mountains, was £2,384. 10*s*. 0*d*.

Transport

110. Three new ¾ ton Ford trucks and one ¾ ton Chevrolet truck were purchased during the year.

Costs

111. (a) The total cost of all conservation work in the Lowlands was £14,156. 4*s*. 9*d*. This includes construction of dams, spillways, fencing, treeplanting and grass planting, but excludes capital costs and depreciation on plant, the salaries and allowances of conservation officers and overhead administrative charges.

112. (b) The actual cost of laying out Buffer Strips was £4,277. 19*s*. 0*d*. This does not include demonstrators' salaries, purchase of oxen and overhead expenses.

113. (c) Diversion Furrows cost £3,549. 19*s*. 4*d*. for the 108,357 yards of 6 ft., 85,118 yards 5 ft., 108,358 yards 4 ft., and 21,225 yards 3 ft. furrows. These costs include the cost of building up gully banks with oxen and scrapers and also wages paid to repair gangs and grass planting.

Educational Visit

114. Soil Conservation Officer attended the Pan African Conference on Soil Conservation held at Goma, in the Belgian Congo, in November, 1948.

CONCLUSION

Visitors

115. The progress which has been made in Basutoland with soil conservation work and rotational grazing in the mountains continues to arouse considerable interest. Visitors during the year included Mr. L. Peachey, Soil Conservation Officer, Swaziland, Professor MacMillan, Director of Colonial Studies, St. Andrew's University, Messrs. D. Swanson and J. Gurrin of Messrs. J. Arthur Rank Film Organization. Mr. Matters of the *Toronto Tribune*, Mr. Watt of Southern Rhodesia, Dr. Lowdermilk late of the United States Soil Conservation Service.

Acknowledgements

116. I desire to record my appreciation and thanks for the assistance so readily given to this Department by both officials and non-officials throughout the year. It is also my pleasant duty to thank all members of my staff for their continued and unstinted co-operation and support.

J. G. M. KING,
Director of Livestock and Agricultural Services.

APPENDIX I

STAFF

With the exception of the post of Veterinary Officer, establishment was filled during the period under review. The following is the staffing of the nine Districts into which Basutoland is devided :

Maseru	
J. G. M. King	Director of Livestock and Agricultural Services
P. A. Bowmaker	Principal Agricultural Officer
E. T. Fern	Principal Veterinary Officer
L. Collett	Soil Conservation Officer
R. K. Tennant	Senior Agricultural and Livestock Officer
A. Bisschoff	Agricultural & Livestock Officer
R. Heering	Accounting Clerk
W. A. R. Schefermann	Storekeeper
N.W. Dixie.	Assistant Clerk
	1 Soil Conservation Foreman
	2 Veterinary Assistants
	1 Agricultural Supervisor
	1 Agricultural Overseer
	12 Demonstrators
	7 Assistant Demonstrators
	6 Clerks
Mafeteng	
A. E. Hensley	Senior Agricultural & Livestock Officer
G.Wiggill	Agricultural & Livestock Officer
	1 Soil Conservation Foreman
	5 Demonstrators
	8 Assistant Demonstrators
	1 Clerk
Mohale's Hoek	
G. S. Bennie	Agricultural & Livestock Officer (seconded to Mauritius)
A. G. Bringhtmore	Agricultural & Livestock Officer
	1 Soil Conservation Foreman
	4 Demonstrators
	4 Assistant Demonstrators
	1 Clerk
Quthing	
G. Larkan	Agricultural & Livestock Officer
	5 Demonstrators
	6 Assistant Demonstrators
	1 Clerk
Qacha's Nek	
G. Chalmers	Senior Agricultural & Livestock Officer
	4 Demonstrators
	15 Assistant Demonstrators
	1 Clerk
Mokhotlong	
H. B. Wroughton	Agricultural & Livestock Officer
	3 Demonstrators
	8 Assistant Demonstrators
	1 Clerk

Butha Buthe

R. Barry	Agricultural & Livestock Officer
	1 Soil Conservation Foreman
	3 Demonstrators
	10 Assistant Demonstrators
	1 Clerk

Leribe

M. Wilhelm	Senior Agricultural & Livestock Officer
A. L. Mapham	Agricultural & Livestock Officer
	1 Soil Conservation Foreman
	3 Demonstrators
	4 Assistant Demonstrators
	1 Clerk

Teyateyaneng

I. Chard	Agricultural & Livestock Officer
	1 Agricultural Overseer
	4 Demonstrators
	4 Assistant Demonstrators
	1 Clerk

APPENDIX II

Mean Monthly Rainfall for nine Stations

1948	July	·06	inches
	August	·06	„
	September	·11	„
	October	2·37	„
	November	1·12	„
	December	1·24	„
1949	January	3·48	„
	February	3·10	„
	March	2·66	„
	April	1·18	„
	May	1·49	„
	June	·39	„
		17·26	inches. Average for 33 years 28·59 inches
	July	·33	inches
	August	·05	„
	September	·74	„
	October	2·09	„
	November	4·21	„
	December	4·35	„
		11·77	inches

APPENDIX III

APPROXIMATE AGRICULTURAL PRODUCTION IN 1949
and preceeding years in thousands of bags of 203 lb. gross

Crop	1943	1944	1945	1946	1947	1948	1949
Maize	720	700	400	414	715	830	50
Sorghum	324	300	150	123	490	380	30
Wheat (spring)	360	416	325	156	350	430	50
Wheat (autumn)							10
Other crops	40	56	40	32	36	60	18
	1,444	1,472	915	725	1,591	1,700	158

APPENDIX IV

Wool & Mohair Co-operative Marketing Societies, 1949

Number of Societies	6
Average number of members	130
Total quantity of wool sold	250,000 lb.
Total revenue to producers approximately	£30,000.

APPENDIX V

CONTROLLED GRAZING IN BASUTOLAND

1. The mountain zone is separated from the rest of the country a sharp escarpment, and is approximately 7,500 square miles in extent. Soils are derived from basalt rock, and hence, although usually shallow, are very fertile. Only a negligible area of the zone is flat country. Through the ages, ice and water action have carved the original basalt into innumerable deep valleys and ravines.

2. The valleys at present support a population of about 200,000 individuals, and cultivation, all on slopes of varying degrees of steepness is carried on up to the elevation of about 8,000 ft. wherever there is ground which is suitable for ploughing. It is estimated that about 650 square miles are cultivated in the mountains, which when combined with the area of grassland which borders the cultivated areas, and which has been permanently understocked (amounting to a further estimated area of 700 square miles) leaves

an area of a little over 6,000 square miles where the grazing problem has to be considered.

3. The type of grazing which is found may broadly be divided into three classes, depending on altitude and aspect which may most conveniently be shown in the following tabulated form :–

Mountain Grazing Area

Altitude Zone	*Aspect*	*Dominant Grass Spp.*	*Estimated Area*
5— 7,000 ft.	N.E.S.W.	Mixed	1,450
7— 9,000 ft.	NE, N, NW.	Red Oat—Themeda-triandra	1,500
7— 9,000 ft.	SW. S. SE	Festuca caprina	1,500
9—11,000 ft.	All aspects	Festuca caprina	1,650
Cultivated and ungrazed area	All aspects	—	1,350
		Total	7,450

It is in the zones between 7,000 ft. and 11,000 ft. that control is most urgently necessary, but wherever possible control is extended to the lower elevations.

5. In general the first slopes to become denuded were those adjacent to the lowlands, i. e. the Maluti escarpment running south-west to north-east from Quthing to Butha-Buthe. Some 60 years ago, the few herd boys who went into the mountains with stock during the summer were practically the only mountain inhabitants (except in the Orange River Valley). Population pressure, and the falling productivity of the lowlands brought about a steady influx of permanent population to the mountain areas, and even at the present time, when the mountains may be considered to be populated to full capacity, there is an annual increase in the area of land cultivated there.

6. The influx of population combined with the increase in cultivated land in the mountain area has brought about a reduction in the area available for stock grazing. There has been a concentration of stock in the neighbourhood of villages, with a consequent deterioration in grazing, which has been a further cause of the slow but steady eastward migration of Basuto, with the establishment of new villages and further deterioration of grazing as a concomitant. Thus in general terms, the only grazing which could be said to be in fair condition is at present to be found on the slopes at the top of the eastern and south eastern escarpment.

7. While the establishment of cattle posts by individuals was in theory only allowed with the permission of the ward chief, in practice it was found that ward chiefs did not visit cattle post areas regularly and had only a limited knowledge of what was going on in these parts of their wards. Some areas are most difficult of access, a point which had to be borne in mind in the formulation of a scheme for the rehabilitation of the dunuded areas. Also there is little relation between the cattle post area which a stock owner uses and the area in which he resides.

8. As has been stated, there is a sharp dividing line, depending upon aspect, throughout the cattle post area between the types of grazing to be found up to an elevation of 9,000 ft. The northern, north-eastern and north-western slopes have a climax cover of the valuable *Themeda triandra* (red oat grass) while the southern slopes mostly still remain with their original cover of the relatively inferior *Festuca caprina* (*fescue sp.*) Grazing for many years has been concentrated upon the Themeda slopes, both on account of the greater palatability of this species and of warmth, with the result that the grass cover on these slopes has been eaten and trodden out and its place taken to a greater or lesser degree by tough shrubby growth, predominantly the Bitter Karroo bush. This will not thrive on the southern slopes or above an elevation of about 9,000 ft. Bitter Karroo bush offers comparatively little resistance to soil erosion, is useless as stock feed, and if grazing continues in areas where bush is firmly established grass has no chance of survival except in the centres of the clumps of bush, where it is inaccessible to stock. Above 9,000 ft. the dominant grass species are *Festuca caprina* and *Danthonia sp.*

9. Experimental work has shown however that Bitter Karroo bush will not survive when in full competition with *Themeda*, and upon this fact the scheme for the rehabilitation of bushed area is based.

10. The following factors have been borne in mind in bringing into effect a scheme for periodically resting all grazing areas :

(a) It was originally intended to beacon off areas into blocks which would be rested every third year. As beacons would have little meaning to herd boys, it was considered that any scheme for rotation must depend upon natural boundaries (watersheds, and to a lesser extent rivers and streams), or aspects, which are well understood by the Basuto.

(b) Any scheme must be easy to enforce. A limited number of grazing caretakers, whose duties compare with those of specialized police, could be employed, but the division of grazing areas for rotational purposes must be such that caretakers are easily able to visit all parts of their caretakings.

(c) There must be an inducement for the chiefs to take an interest in enforcing control measures.

(d) The mass of the people must not be unduly upset by any measures taken.

(e) The need for the scheme to be run by the Basuto themselves with the least possible European supervision.

15 In April 1947 it was decided that large scale grazing control could be initiated in the Qacha's Nek and Mokhotlong districts, the combined area of the cattle posts of which districts amounts to perhaps 1,500 square miles. In the Mokhotlong district the slopes adjacent to all the tributaries to the Orange River on its left bank, roughly from below the 9,000 contour and the Khubedu River valley, an area estimated to cover 450 sq. miles, were to be destocked completely up to points between 5 and 10 miles from the eastern escarpment. This latter area was found to be practically ungrazed, the reasons given for this being the heavy incidence of stock theft in these parts and the losses of stock which occur there in cold weather, combined with the west to east migration which has been described. All stock from the valleys of the tributaries were to be taken up to this ungrazed area for an indefinite period to allow for the re-establishment of grasses on the lower slopes. Similar measures were later taken in the Batlokoa country on the right bank of the Orange over an estimated area of 150 sq. miles. Thus to date 450 sq. miles have been rested for 2 years and 150 square miles for 1 year.

16. It is estimated that from two to five years rest will be required before the recovery of overstocked areas will be sufficient to warrant the return of stock to these areas. When the time arrives, stock are to be allowed to return in limited numbers, and grazing will be controlled on an aspect basis as described later.

17. The principle of resting areas of grassland is well understood by the Basuto, who customarily rest certain limited areas for thatching grass or winter grazing. The declaration and definition of areas which are to be rested is in the hands of the ward chief, so that all

arrangements for control are made by the chief of the area under consideration.

18. Nine grazing caretakers were appointed, whose duty it was each to patrol his area at irregular intervals and to report to the ward chief any cases of infringement.

19. The question of control in village areas was discussed with the ward chief, who strongly advised that control in the cattle posts should be properly established before this was attempted, on the lines that the Basuto should learn to walk before they run. Village area control is referred to later.

20. Similar arrangements have been made in the Qacha's Nek district, where six caretakers have been appointed. A large area in the Mashai neighbourhood will need to remain destocked for a considerable time. A number of villages in the area under the direct control of the ward chief are being grouped, to facilitate the introduction of a rotation as soon as this is warranted by the general improvement in cover, the area in the meantime having been destocked with the exception of milk cows and riding horses. An area covering some 60 square miles in the upper Tsoelike valley has been laid out on a 3 year rotational basis.

21. In general de-stocking measures have been very highly effective. In the valleys visited the recovery is considered to be very satisfactory. It has been observed that the *Themeda* grass, which it is desired to re-establish into its climax form of a complete mat, and which prior to destocking had degenerated into isolated patches, was showing definite signs of vegetative expansion although except where it had not been overgrazed in the past (i. e. in the centres of clumps of bitter karroo bush) it had not seeded. It is therefore necessary that these areas be rested for a further period,—the length of this period to be decided in the light of later observations, until *Themeda* has reached the stage of seeding freely and generally. No damage was observed in the areas bordering the escarpment to which stock had been sent.

22. Relatively small patches are seen where there is no apparent increase in grass cover. In certain cases, notably in the near vicinity of large cattle and sheep kraals, all grass has been eaten or trodden out by stock, to the extent that there is literally no grass of any

species to start the covering process. Experience from experiments have shown that such areas have to pass through the ordinary botanical sequence before the climax species become dominant, and these areas will remain destocked until this has occurred.

23. The thinking section of the Basuto people, both in the Mokhotlong and Qacha's Nek districts, are now wholly in favour of the measures which have been adopted so far.

24. In 1949 an approach was made to the Agricultural Department by the Paramount Chief asking that her ward should be dealt with in a similar fashion to the Mokhotlong and Qacha's Nek wards. On account of the nature of the country and the absence of any large unstocked areas in her ward, it was found impracticable to use similar measures, and accordingly the Paramount Chief was consulted with a view to obtaining

(1) the complete destocking of all areas where the dominant vegetation is bitter karroo bush (this would involve little hardship or stock movement, as the present carrying capacity of these slopes is very low) and

(2) confining grazing to the western and southern slopes during the present season, and changing to the other two slopes in September, 1950 and so on. This has been agreed to, and further, is to apply to both village and cattle post areas. This is at present being arranged. Nine caretakers have been appointed, and if the trial is a success, the scheme will be applied in returning stock to the destocked areas in Mokhotlong and Qacha's Nek districts, and elsewhere in the Territory.

25. The measures taken in three of the principal mountain districts (Mokhotlong, Qacha's Nek and Maseru) have been described in the foregoing in some detail, as the area estimated to have been brought under control since the scheme started in 1947 represents approximately half of the total cattle post grazing area of the Territory. Efforts have been concentrated in these areas since they include the basin of the Orange River where protection is a matter of urgency. The chiefs concerned have shown themselves well aware of this and have proved themselves anxious to co-operate and help in every way possible.

26. Although the principal efforts of the Agricultural Department have been concentrated in the areas described, the requests

by chiefs from other areas for the introduction of grazing control have not been neglected. Small areas in practically all the other districts have been tackled, and these will be steadily extended as time goes on. The encouraging feature of the campaign is the growing recognition in a little over two years by a large number of chiefs of the necessity for it.

27. The present position may be summarized as follows :

1.	Area destocked for 2 years (Qacha's Nek and Mokhotlong)	900 sq. miles
2.	Area destocked for 1 year	150 „ „
3.	Area at present being organized on the "North-South" basis (Maseru)	842 „ „
4.	Total areas of Qacha's Nek, Mokhotlong and Maseru (mountain section) (i.e. areas where rehabilitation has started, and further denudation stopped)	2,800 „ „
5.	Total mountain area, less arable areas adjacent grassland	6,100 „ „
6.	Balance of mountain area, less arable areas, which has still to be brought under control	3,300 „ „

APPENDIX VI

Demonstration Small Holdings—Position for Year Ending 30th September, 1949

(7·5 acres arable, 6·0 acres grazing, 0·5 garden and building)

	Mohale's Hoek				Maseru			
	Consumed or on hand		Sold		Consumed or on hand		Sold	
	Quantity	Value £. s. d.	Quantity	Value £. s. d.	Quantity	Value £. s. d.	Quantity	Value £. s. d.
Wheat (lb.)	1,000	8 15 0	1,400	12 5 0	700	5 12 6		
Maize (lb.)	200	1 0 0			900	4 10 0		
Sorghum (lb.)	400	4 0 0						
Beans & Peas (lb.)	200	5 0 0			100	2 10 0		
Potatoes								
Vegetables		3 17 6		1 2 6				
Livestock (Increase In valuation)		27 10 0			1 calf	10 0		
Milk (gallons)	300	15 0 0			120	6 0 0		
Eggs (dozen)	50	3 4 6		10 6	40	3 0 0		
Livestock Sales			1 pig	8 10 0			1 sow	10 0 0
Totals		68 7 0		22 8 0		22 2 6		10 0 0

APPENDIX VII

Livestock Industry Statistics—September 1948—December, 1949

	Cattle	*Horses*	*Donkeys*	*Sheep*	*Goats*	*Pigs*	*Mules*
Census February 1949	431,141	98,832	49,005	1,557,546	609,267	30,111	2,468
Exports	16,641	172	3	3,590	74	–	1
Imports	23,066	4,412	99	3,212	114	41	838
Wool Exports				17,194,362 lb.			
Mohair Exports					1,867,306 lb.		
Hides Exported	69,541 units						
Skins Exported				104,464 units			
Bones Exported (all categories of Livestock)	833,346 lb.						

APPENDIX VIII

SOIL CONSERVATION PROGRESS

Measure	Prior to 1949	During 1949	Total to End 1949
Area terraced Lowlands (acres)	226,860·0	30,486·6	257,346·6
Length of terrace (miles)	13,541·5	1,799·5	15,341·0
Buffer Strips Mountains (acres)	202,857	57,941·6	260,798·6
Diversion Furrows Mountains (acres)	45,758	13,020·4	58,778·4
Diversion Furrows Mountains (yards)	1,067,577	323,053	1,390,635
Dams constructed	259	28	287
Trees planted	847,802	11,365	859,167

The above figures for the year under review are made from district totals as shown below :

District	Area Terraced Acres	Area protected by Diversion Furrows	Area protected by Buffer Strip	Dams
Butha Buthe	5,402	2,060	3,933·8	2
Leribe	2,127	681	1,708·0	4
Teyateyaneng	5,229	555·4	3,182·6	6
Maseru (Gap)	5,594			3
Matsieng	2,277			2
Maseru Mountains		1,756·0	4,127·6	–
Mofoka	2,867			3
Mafeteng	2,964·3	49·0	2,119·3	4
Mohale's Hoek	4,026·3	86·0	13,558·7	2
Quthing		104·0	8,266·3	1
Qacha's Nek		4,949·6	12,561·1	1
Mokhotlong		2,779·4	8,484·2	
Totals	30,486·6	13,020·4	57,941.6	28